

# NATURAL SAVANNAS OF TRINIDAD

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Botanically speaking, one of the most interesting Trinidad vegetation types is that of the "natural" or "dry" savannas. Some of the problems posed by this group have not yet found a universally accepted solution. Floristically, they present many interesting forms not found elsewhere in this territory and, until recently, human interference was limited. The following notes will, it is hoped, encourage Nature lovers to study this group.

Our "natural savannas" come under three heads: First, the flat land savannas running at the base of the Northern Range, comprising the Mausica, O'Meara, Piarco and Aripo savannas; second, the southern Erin savannas, of which St. John savanna, near Buenos Aires, is the largest; third, the so-called mountain savanna, north of St. Joseph.

They all lie in small forest pockets, generally framed by a ring of palm trees, with the Moriche palm predominating, delimited clearly and, as far as is known, permanently, from the surrounding forest fringe which appears neither to encroach on, nor retreat from them, at least within living memory.

## ORIGIN OF SAVANNAS

The origin of these savannas and their peculiar features has been explained in several sharply contrasted ways. It seems pretty well established now that these limited areas represent remnants of a very ancient land surface, an extension of the llanos of the Venezuelan mainland, now almost completely eroded. Owing to the large proportion of quartzite in the parent rock it does not readily weather sufficiently to produce "soil" and allows the formation of only a shallow layer of top or even sub-soil for the ordinary plant to grow on. In course of time a deep layer of heavy clay has accumulated on the shallow, almost impermeable rock. These two factors have produced an extremely impeded drainage system. As a result, the ground is waterlogged during the greater part of the year and bone dry during drought. Aeration is defective; roots cannot easily penetrate deep and find it hard to live at all; plants suffer alternately from physical and physiological drought; nitrates are scarce, because the aerobic bacteria, which reduce decaying vegetable and animal remains to a utilisable inorganic form, cannot thrive; thus the plant population may starve for lack of sufficient salt and mineral constituents, whilst poisonous organic acids may accumulate to a harmful degree.

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As a result of these abnormal "site" conditions, the savanna flora is, first of all, highly specialised. Only species whose make-up enables them to face such unfavourable soil conditions can establish themselves; reduced growth, xerophytic adaptations of root, stem and leaf, and special seasonal adaptations are the rule. Secondly, only a small number of species can survive and the flora is, therefore, very limited; thirdly, the species represented are strictly endemic, as but few, if any, migrants can develop the necessary adaptational characteristics.

### LAKES OF GRASS

A brief description of some of the plant groups found will illustrate these features. Viewed from a distance, the savannas have been likened to lakes of grass or sedge; here and there emerge stunted shrubs or small trees with gnarled trunks, whilst a limited number of herbaceous forms eke out a precarious existence sheltered by the screening grass carpet.

The stunted shrubs comprise *Byrsonima crassifolia*, *Chrysobalanus pellocarpus*, *Curatella americana* (in all except the Aripo savanna), *Ilex arimensis*, *Miconia macrothyrsa* and several other species of that genus. Indicative of the nitrate deficiency factor are the so-called insectivorous plants, *Drosera longiflora* and *Utricularias* of several species; *Drosera* captures and digests insects by means of its sticky, glandular hairs, whilst *Utricularias* traps them in under-surface, highly mechanised bladders. The presence, of a number of ground orchids show that the soil is not more promising for plant life than the trunks of trees normally favoured by orchids. Small flowering herbs include the Rubiaceous *Perama hirsuta*, *Sauvagesia sprengelii*, *Polygala* of at least four different species, *Curculigo scorzonerifolia*, *Phaseolus linearis*, *Amasonia campestris*, *Sipanea pratensis*, *Sida linifolia* (the last two confined to the Erin savannas), and a limited number of others. The presence of the parasite *Cassytha americana*, the Bromeliads *Tillandsia* and *Catopsis*, species of *Ficus* and the strangler *Clusia* confirms the fact that the environmental factors are indeed abnormal. Ferns and Salaginellas, such as *Lindsaya parvula*, *Adiantum echinata*, *Lycopodium carolinianum*, and a Sphagnum-like moss are found here and there.

### ST. JOSEPH MOUNTAIN SAVANNA

St. Joseph mountain savanna is the only natural type not "sited" on flat, level ground. It consists of two rather distinct types separated from each other by a definite ridge; one side is characterised by the prevalence of the *Byrsonima-Curatella* shrubs found at Mausica and O'Meara, the other side has a dominance of the *Myrcia-Roupala*